

## HOW TO IDENTIFY HIGH RISK POPULATION SUBGROUPS FOR HEAT PREVENTION PROGRAMS: AN INDICATOR OF SUSCEPTIBILITY BASED ON ADMINISTRATIVE DATA

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### Background and Aims

A key component of heat prevention programs is the identification of high-risk population. This study presents an indicator of susceptibility to heat based on data from current informative systems and developed within the Italian Heat Health Prevention Plan.

### Methods

We analysed the cohort of residents in Rome 65+ years in the period 2005-2007 (N=624,561). Variables considered were age, gender, civil-status and socio-economic position, and a list of diseases associated to heat extracted from the hospital information system. Vital status was retrieved from the Regional-Mortality-Registry. We used a Poisson generalised linear model to predict the probability of dying during days of heat wave (HWd) and no HWd for each combination of the above risk factors, separately for the 65-74 and 75+ years old. Two indicators were tested: the absolute (AD) and relative difference (RD) of the predicted probabilities. The observed relative risk (RR) of dying during HWd and no HWd were computed for increasing values of the indicator, both in the studied and a validation population.

### Results

The RD indicator for the 65-74 yrs-old and AD for the 75+ were chosen. Indicators discriminate well those with the highest RR of dying in HWd vs no HWd, as well as those who seem to be protected during HWd. Among the 65-74 yrs-old, subjects in the highest 5% of the score distribution have at least a chronic pathology associated to heat and the 90% have COPD. While among the 75+ yrs group, 60% have at least three chronic diseases, 80% are women, and 90% are not married. Socio-economic-position doesn't differ according to susceptibility levels.

### Discussion

The indicator might represent a valid standardized approach for the selection of subjects to be targeted to prevention programs. However its performance should be enhanced taking into account other sources of data, as the pharmaceutical registry.